SO-1.2 Rev. 2
NCC98
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Title: RT Scheduling New Enhancements

Objectives:
- Verify Flexible Scheduling Enhancements to include:
  - ⇒ Flexible Service and Event Start/Stop Times
  - ⇒ Flexible Service and Event Durations
  - ⇒ Replace Requests
  - ⇒ Alternate Requests
  - ⇒ Wait listing
- Verify capability of editing requests.
- Verify freezing of flexible schedules.
- Verify ability to add, delete, modify, and process TSWs.
- Verify Transmission Enhancements:
  - ⇒ Retransmission of Deletes
  - ⇒ STRSs
- Verify use of Customer Request Priority Levels.
- Verify scheduling of TDRS H, I, J Event(s)/Services.
- Execute delog reports using the NCCDS Central Delogger (NCD).
- Characterize effectiveness, usability, and timeliness of new SPSR tools.
- Train SO and fill out skills catalogs and Training Event Reports (TERs).
- Document Verification

Configuration:
System will be configured in the internal test configuration with the NTS configured to simulate the externals. All operator actions resulting in system output will be directed to NTS. (See Figure 1.)

Prerequisites:
- NSIA will configure system as pictured.
- Operator will review the SPSR User's Guide.
- All test and operator accounts are set up.
- Restore Database from FA-1.2 and verify alternate requests are present for Test Day + 1.
- Database Mods have been made to reflect full support customers and use of TDRS H, I, J.
- All NTS data has been created and verified.
- Necessary STRSs for scheduling autothroughput are resident in database and have been activated.

Data Source:
NTS (so12.blk) or UPS

Ops Scenario: (Italicized steps are performed by NSIA, all others are performed by the operator.)

REQUEST RECEIPT AND VALIDATION:
1. Verify Batch Boundary = Active Period End.
2. Verify Wait List Processing is enabled in the Semi-Automatic Mode.
3. Review Schedule of mixed flexible and fixed events.
4. Delete events for Test Day + 1.
5. Retransmit deletes to MOCCs.
6. Verify scheduling of Alternate requests for Test Day + 1.

7. *From NTS or UPS terminal, transmit flexible schedule requests for Test Day + 1 to include:*
    - *Event with event and service start/stop time tolerances*
    - *Event with flexible service durations*
    - *Event with coupled service number*
    - *Event with service bounded by service number*
    - *Alternate Request*
    - *Request marked for wait list processing*
    - *Customer-assigned priorities*
    - *TDRS H, I, J event*
    - *Time period already transmitted to GTs.*

   (NOTE: The users planning to use flexible scheduling include HST, MSOCC, and possibly EOS AM1. For TDRS H, I, J any current S-band user could use SMA; plans for Ka band only include ISS.)
8. Verify receipt and validation of schedule requests *and transmission of SRMs, flexible/fixed USMs, NESs, and SHOs.*
9. *From NTS or UPS terminal, transmit invalid flexible SARs to generate the following rejects:*
    - *Invalid UID*
    - *Illegal SUPIDEN (10)*
    - *SSC not found (49)*
    - *PE not found (50)*
    - *Circular service start time specification (59)*
    - *Use of TSWs requested, applicable TSWs not available (67)*
10. Verify receipt and rejection of invalid requests *and transmission of SRMs*.
11. Edit invalid requests and resubmit for validation.
12. Verify edited requests were validated and scheduled.
13. *Verify transmission of SRMs, fixed USMs, NESs, and SHOs*
14. *From NTS or UPS terminal, transmit a replace request for a scheduled event resident at the GT.*
15. Verify receipt and processing.
16. *From NTS or UPS terminal, transmit a request for time X to be placed on the waitlist for a high priority user.*
17. Verify request is received, placed on the waitlist, *and transmission of appropriate SRM.*
18. *From NTS or UPS terminal, transmit a replace request for the lower priority event at time X.*
19. Verify request is received, replaced, and higher priority event is not scheduled from the waitlist.

TSW UPDATES:

20. *From NTS or UPS terminal, transmit TSW updates for several users.*
21. Verify receipt and validation of TSWs
22. Verify scheduled events are validated against TSWs*, and an SRM is sent for any event failing TSW schedulability check.*
23. Allow events failing TSW check to remain on the schedule.
24. Modify a TSW for an event not validated.
25. Copy a current TSW.
26. Delete the TSW copied in step 25.
27. Add a TSW for an event not validated.
28. Delete remaining events failing validation.
29. *Verify distribution of SRMs, SHO deletes, and NECs.*
26. *From NTS or UPS, transmit a blank TSW for one SIC.*
27. Verify that receipt of the blank TSW clears all existing TSW information for that SIC.

OPERATOR ACTIONS:

28. Generate a replace request for a scheduled event.
29. Generate a flexible SAR and alternate.
30. Generate a wait list request for a rejected request.

31. Generate several invalid requests and verify generation of appropriate problem codes.

FREEZING OF SCHEDULES/SCHEDULE TRANSMISSION:

32. *From NTS or UPS terminal, transmit request to be frozen at T+000015 (15 minutes).*
33. Verfity request is received and scheduled *and flexible event information is transmitted*.
34. Verify freezing of flexible schedules at:
    - ⇒ customer specified freeze times
    - ⇒ customer's default freeze time
33. *Verify transmission of fixed USMs to customers.*
34. Prepare and transmit schedules to ground terminals.
35. Verify all remaining flexible events are frozen prior to transmission to the ground terminals.

NCD

36. Perform a delog of:
    - ⇒ Flexible SARs received from a MOCC
    - ⇒ Flexible USMs
    - ⇒ TSWs
    - ⇒ GT response to a replace request

Roles and Responsibilities:

SO:

- Complete the SO Position Log IAW Local Operating Procedures.
- Perform all Operator Actions Database Maintenance Activities.
- Respond to Alerts.
- Checkout redlined version of LOPs including, but not limited to:
    - NCC-LOP-002 OPM-59 Message Processing
    - NCC-LOP-006 OPM-54 WSC Scheduling Request Message Processing
    - SU-SO-LOP-001 Daily Review Event Logs
    - SU-SO-LOP-002 Console Position Log
    - SU-SO-LOP-003 Scheduling of TDRSS Customers
    - SU-SO-LOP-004 Communication Test Messages (CTM)
    - SU-SO-LOP-006 WSC Schedule Transmission/Retransmission
    - SU-SO-LOP-007 Shift Preparation Items
    - SU-SO-LOP-009 User Event Accountability Process
    - SU-SO-LOP-010 Scheduling S0200PMs for Blocking TDRS Resources
    - SU-SO-LOP-011 BRTS Telemetry and Tracking Data message Playbacks
    - SU-SO-LOP-012 OPM-54 Processing and Distribution
    - SU-SO-LOP-015 TDRSS BRTS Scheduling
    - SU-SO-LOP-016 Rescheduling of Events
    - SU-SO-LOP-018 Verbal GN Support
    - SU-SO-LOP-019 Playback Requests
    - SU-SO-LOP-023 Scheduling an SN S/C Emergency When TDRSS Resources Are Already Allocated

NSIA:

- One NSIA engineer required.
- Configure system.
- Perform all italicized steps in test case.
- Observe/assist SO in completion of all other steps.

DOCS:

- Checkout redlined version of the following documents:
  - 532-HB-NCC/SO Scheduling Handbook (Real Time Section).
  - TBD SPSR User's Guide

Estimated Run Time: 4 hours

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Figure 1: Test Configuration